

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) An automotive heat exchanging system comprising:
 - a heat exchanger mounted at a front of an engine and an automatic transmission and to be supplied with a coolant;
 - an electric fan located at the front of said automatic transmission and operable to ensure airflow through said heat exchanger;
 - a shroud attached to and covering peripheral portions of said electric fan and said heat exchanger to form an air passage inside of said shroud for allowing airflow through said heat exchanger to flow toward said automatic transmission;
 - a shutter arranged in said shroud and having a periphery attached to said shroud, said shutter being operable to open and close said air passage;
 - an automatic transmission oil temperature sensor for sensing a temperature of oil in said automatic transmission and for outputting an automatic transmission oil temperature signal; and
 - a controller for controlling opening and closing of said shutter based on the automatic transmission oil temperature signal received from said automatic transmission oil temperature sensor so as to control the temperature of the oil in said automatic transmission.
2. (Previously Presented) The automotive heat exchanging system of claim 1, further comprising an oil warmer arranged to be supplied with the coolant circulating through said engine and said heat exchanger, said oil warmer being attached to said automatic transmission to warm the oil in said automatic transmission.
3. (Previously Presented) The automotive heat exchanging system of claim 1, wherein said electric fan is located at a rear of said heat exchanger, and said shutter is located between said heat exchanger and said electric fan.

4. (Previously Presented) The automotive heat exchanging system of claim 1, wherein said electric fan is located at a rear of said heat exchanger, and said shutter is located at a rear of said electric fan.

5. (Previously Presented) The automotive heat exchanging system of claim 1, wherein said electric fan is located at a front of said heat exchanger, and said shutter is located at a rear of said electric fan.

6. (Previously Presented) The automotive heat exchanging system of claim 1, wherein said controller is operable to fully open said shutter for allowing air to pass through said air passage when the automatic transmission oil temperature is more than a predetermined oil temperature.

7. (Previously Presented) The automotive heat exchanging system of claim 6, wherein said controller is operable to partially open said shutter when the automatic transmission oil temperature is no more than the predetermined oil temperature, and to fully open said shutter when the automatic transmission oil temperature is more than the predetermined oil temperature.

8. (Previously Presented) The automotive heat exchanging system of claim 6, wherein said heat exchanger includes a condenser for air conditioning, and said controller is operable to open said shutter regardless of the engine temperature and the automatic transmission oil temperature when an inlet pressure of said condenser is more than a predetermined pressure.

9. (Previously Presented) The automotive heat exchanging system of claim 6, further comprising an engine temperature sensor sensing an engine temperature of the coolant and outputting an engine temperature signal, said controller operable to fully open said shutter for allowing air to pass through said air passage when the automatic transmission oil temperature is more than a predetermined oil temperature and when the automatic transmission oil temperature

is no more than the predetermined oil temperature and said engine temperature is more than a predetermined engine temperature.

10. (Previously Presented) The automotive heat exchanging system of claim 9, wherein said controller is operable to partially open said shutter when the automatic transmission oil temperature is no more than the predetermined oil temperature, and to fully open said shutter when the automatic transmission oil temperature is more than the predetermined oil temperature.

11. (Previously Presented) The automotive heat exchanging system of claim 9, wherein said heat exchanger includes a condenser for air conditioning, and said controller is operable to open said shutter regardless of the engine temperature and the automatic transmission oil temperature when an inlet pressure of said condenser is more than a predetermined pressure.

12. (Previously Presented) The automotive heat exchanging system of claim 2, wherein said heat exchanger includes a radiator, and said controller is operable to fully open said shutter when the automatic transmission oil temperature is more than the predetermined oil temperature, and to direct a flow of the coolant flowing to said radiator to said oil warmer when the engine temperature of the coolant flowing to said radiator is more than the predetermined engine temperature.

13. (Previously Presented) The automotive heat exchanging system of claim 12, wherein said controller is operable to partially open said shutter when the automatic transmission oil temperature is no more than the predetermined oil temperature, and to fully open said shutter when the automatic transmission oil temperature is more than the predetermined oil temperature.

14. (Previously Presented) The automotive heat exchanging system of claim 13, wherein said controller is operable to change an opening amount of said shutter according to at least one predetermined low oil temperature lower than the predetermined oil temperature.

15. (Previously Presented) The automotive heat exchanging system of claim 13, wherein said heat exchanger includes a condenser for air conditioning, and said controller is operable to open said shutter regardless of the engine temperature and the automatic transmission oil temperature when an inlet pressure of said condenser is more than a predetermined pressure.

16. (Previously Presented) The automotive heat exchanging system of claim 1, wherein said heat exchanger includes a condenser for air conditioning, and said controller is operable to open said shutter regardless of the engine temperature and the automatic transmission oil temperature when an inlet pressure of said condenser is more than a predetermined pressure.

17. (Previously Presented) The automotive heat exchanging system of claim 1, wherein said heat exchanger comprises a condenser and a radiator at a rear of said condenser.

18. (Previously Presented) The automotive heat exchanging system of claim 1, wherein said shroud has a front end, a rear end, sidewalls connecting said front end and said rear end, and an opening formed in said sidewalls to allow air to flow out of said air passage inside of said shroud.